Correlational research

There are many types of correlational research. The commonality among all types of correlational research is that they explore relationships between variables. Where descriptive research only described what was going on, correlational research talks about the link between different things. It is important to understand that correlational research does not tell us that Variable A caused Variable B, but rather that they are somehow related.

For example, if I told you that there was a correlation betweendomestic violence(violencebetweenfamilymembers) and bowling, you would look at me strangely. But there is a relationship between the variables (variable 1- domestic violence, and variable 2- bowling). As more people bowl in the US, more domestic violence occurs. Does that mean that bowling causes domestic violence - like you had bad game and take it out on a loved one? Or domestic violence causes bowling- like you fight with a sibling and feel the need to take it out on some pins?

As you have already guessed - one does not cause the other to occur, but they are related- for every time people bowl, I can predict that domestic violence will go up, and every time domestic violence goes down I should be able to find a lane at the local bowling alley. There is a hidden variable that links both of them together. In this case it is winter time. In the winter more people bowl and more people stay in their homes (which increases the chances of domestic violence).

Direction of a Correlation

Before we examine the different types of correlational research methods, understand that correlations can go in two directions: positive and negative.

• Positive Correlation: when two variables go in the same direction. For example, domestic violence and bowling. When bowling goes up, so does domestic violence. When domestic violence decreases, so does bowling.

• Negative Correlation: here the two variables go in different directions. For example, consumption of garlic and dating (now I am making this one up). The less garlic you eat, the more you date. The more garlic you eat, the less the date.

One variable going in one direction can be used to predict the other variable going in the opposite direction. [pic] Correlational Coefficient Scientists measure the strength of a correlation by using a number called a correlational coefficient. Now you do not have to know how they get the number, but you should know what it means when you see it. The number range from -1 to +1. If two variables (like studying and grades) have a correlation above zero (like +. 76) then you have a positive correlation and the more you study, the better grades you have. If the number is below zero (like -. 2) then you have a negative correlation and when one variable goes up the other goes down (like garlic and dating). If two variables have a correlation of zero then they have NO relationship with each other. The closer the numbers go to either +1 or -1, the stronger the correlation. The strength has nothing to do with whether the number is positive of negative. A correlation of -. 88 is stronger than one that is +. 56. The closer the number gets to zero (whether positive or negative), the weaker the correlation. Are you a little confused? Try this!

Types of Correlational Studies

There are many different ways to show a correlation between two variables. Let's discuss some of the more popular ways; the survey method and naturalisticobservation.

The Survey Method

Perhaps the most common type of research around is survey research. Every time you receive a letter in the mail asking you to take a minute and answer a few questions, or get a phone call begging for ten minutes of your time to speak about how you feel about, you are experiencing the survey method of research. All surveys have one thing in common, they ask questions.

Now there are good and bad things about surveys in research. The good- no matter how you do it, internet, mail, phone, in person- they are fairly cheap. You can cover large populations of people easily if you use the phone or internet. The bad aspects of surveys are that first, the response rate is really low (for every 100 mailing you send out, you will be lucky to get one back). Second, people can lie on the survey so you can always question the validity of your data. Let's break down the survey method as a tool of correlational study. Pretend our hypothesis was the more garlic people eat, the less they date.

First, we have to come up with some survey questions (pretend they ask about the amount of garlic one has eaten in the past 6 months and how much they have dated in the past sixth months). Hopefully, when people answer the survey, we will see that people who have stated that they have eaten a lot of garlic have also answered that they have dated less (a

negative correlation). But who are we going to give the survey to? As with all types of studies (except some case studies) we must choose a sample of people to take the survey (a sample is just a group of subjects).

We have to first identify a population of people from which we are going to get the sample. The population includes anyone who can possibly be chosen to be part of the sample. If we are studying anorexic women and their dating habits we would choose a sample from a population of anorexic women. In the case of garlic and dating, I am going to limit my population to single men and women between the ages of 18-25 from the Suwanee area (if I do not limit my population, then I would have to start contacting people from all around the world).

Now, how do I pick people to be a part of my sample? Do I call all my single friends in the Suwanee area and give them the survey? That would not be a very fair way of doing it. To make the survey valid I must randomly select a sample from the population. Random selection means that every person in my population has an equal chance of being selected for the survey. If I can do this, then my sample has a greatly likelihood of actually representing the larger population I am studying.

How do I randomly sample my population- I can randomly pick names out of a phonebook (but in a way that is unfair to single people in Suwanee who do not have phones)- in other words, finding a truly random sample is not easy.

Naturalistic Observation
Another correlational research method is called naturalistic observation (although you can also use it as a descriptive research tool as well).

Naturalistic observation is when a researcher attempts to observe their subjects in their natural habitats without interacting with them at all. Pretend I had a hypothesis: children who experience violence in the home or violent people.

If I wanted to use naturalistic observation I would find groups of kids and watch them in their home life and compare that to their social life. I would follow them around everywhere they go. I would never interact with them- but just watch. If I see that every time a child experiences violence at home they are violent, I could claim that violence in the home and violent societal behavior are related, but I would never know if the violence at home is causing the violence in society (it could be one of a million other things). Once again, at most, these types of studies show correlation. The pinnacle of allscienceis if it proves causation.